Cochituate Rail Trail
Natick, MA

Notice of Intent

On Behalf Of:
Town of Natick Community Development Office

Submitted to:
Natick Conservation Commission

Prepared by:

BETA Group, Inc.
Engineers • Planners • Landscape Architects
Lincoln, RI - Norwood, MA - Hartford, CT

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Lincoln, RI 02865

September 2014

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Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

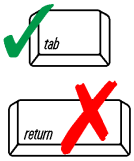
Provided by MassDEP:

MassDEP File Number

Document Transaction Number

City/Town

Important:
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note:
Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

Natick Section of Cochituate Rail Trail — a. Street Address
Natick — b. City/Town
01760 — c. Zip Code

Latitude and Longitude:
d. Latitude
e. Longitude

f. Assessors Map/Plat Number
g. Parcel /Lot Number

2. Applicant:

a. First Name
b. Last Name
Town of Natick Community Development Office — c. Organization
13 East Central Street — d. Street Address
Natick — e. City/Town
MA — f. State
01760 — g. Zip Code
508-647-6450 — h. Phone Number
508-647-6444 — i. Fax Number
j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

a. First Name
b. Last Name
c. Organization
d. Street Address
e. City/Town
f. State
g. Zip Code
h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

William — a. First Name
McGrath — b. Last Name
BETA Group, Inc. — c. Company
6 Blackstone Valley Place, Suite 101 — d. Street Address
Lincoln — e. City/Town
RI — f. State
02865 — g. Zip Code
401-333-2382 — h. Phone Number
401-333-9225 — i. Fax Number
bmcgrath@beta-inc.com — j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

$0 — a. Total Fee Paid
$0 — b. State Fee Paid
$0 — c. City/Town Fee Paid

A. General Information (continued)

6. General Project Description:

The project is the construction of a 2.65 mile shared-use path with overlook areas adjacent to Lake Cochituate. The project will include work within bordering land subject to flooding, inland bank, and buffer zones including excavation, grading, paving, and stormwater management construction.

7a. Project Type Checklist:

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Limited Project Driveway Crossing
4. ☐ Commercial/Industrial
5. ☐ Dock/Pier
6. ☐ Utilities
7. ☐ Coastal Engineering Structure
8. ☐ Agriculture (e.g., cranberries, forestry)
9. ☒ Transportation
10. ☐ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☒ No If yes, describe which limited project applies to this project:

2. Limited Project

8. Property recorded at the Registry of Deeds for:

a. County | b. Certificate # (if registered land)

c. Book | d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☒ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☒ Bank	287 1. linear feet	287 2. linear feet
b. ☐ Bordering Vegetated Wetland	1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☒ Bordering Land Subject to Flooding	3,407 (1. square feet)	3,407 (2. square feet)
	170 (3. cubic feet of flood storage lost)	0 (4. cubic feet replaced)
e. ☐ Isolated Land Subject to Flooding	(1. square feet)	
	(2. cubic feet of flood storage lost)	(3. cubic feet replaced)
f. ☐ Riverfront Area	(1. Name of Waterway (if available))	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☐ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	(1. square feet)	
	(2. cubic yards dredged)	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	(1. square feet)	(2. cubic yards beach nourishment)
e. ☐ Coastal Dunes	(1. square feet)	(2. cubic yards dune nourishment)

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

		Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐	Coastal Banks	1. linear feet	
g. ☐	Rocky Intertidal Shores	1. square feet	
h. ☐	Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐	Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐	Land Containing Shellfish	1. square feet	
k. ☐	Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☐	Land Subject to Coastal Storm Flowage	1. square feet	

4. ☐ Restoration/Enhancement
If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW | b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings | b. number of replacement stream crossings

C. Other Applicable Standards and Requirements

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/online_viewer.htm.

a. ☒ Yes ☐ No

If yes, include proof of mailing or hand delivery of NOI to:

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
100 Hartwell Street, Suite 230
West Boylston, MA 01583

2008
b. Date of map

C. Other Applicable Standards and Requirements (cont'd)

If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.C, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.1.d, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

1. c. Submit Supplemental Information for Endangered Species Review*

   1. ☒ Percentage/acreage of property to be altered:

      (a) within wetland Resource Area — approx. 0.4% / approx. 0.08 acres (percentage/acreage)

      (b) outside Resource Area — approx. 44.96% / approx. 8 acres (percentage/acreage)

   2. ☒ Assessor's Map or right-of-way plan of site

   3. ☒ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work ******

      (a) ☒ Project description (including description of impacts outside of wetland resource area & buffer zone)

      (b) ☒ Photographs representative of the site

      (c) ☒ MESA filing fee (fee information available at: http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm). Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

      *Projects altering **10 or more acres** of land, also submit:*

      (d) ☐ Vegetation cover type map of site

      (e) ☐ Project plans showing Priority & Estimated Habitat boundaries

   d. OR Check One of the Following

      1. ☐ Project is exempt from MESA review.
      Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

      2. ☐ Separate MESA review ongoing. — a. NHESP Tracking # — b. Date submitted to NHESP

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/dfwele/dfw/nhesp/nhesp.htm, regulatory review tab). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

C. Other Applicable Standards and Requirements (cont'd)

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

2. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☒ Not applicable – project is in inland resource area only

b. ☐ Yes ☐ No If yes, include proof of mailing or hand delivery of NOI to either:

South Shore - Cohasset to Rhode Island, and the Cape & Islands:	North Shore - Hull to New Hampshire:
Division of Marine Fisheries - Southeast Marine Fisheries Station Attn: Environmental Reviewer 1213 Purchase Street – 3rd Floor New Bedford, MA 02740-6694	Division of Marine Fisheries - North Shore Office Attn: Environmental Reviewer 30 Emerson Avenue Gloucester, MA 01930

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

3. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

b. ACEC

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

a. ☐ Yes ☒ No

5. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

a. ☐ Yes ☒ No

6. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

a. ☒ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

2. ☒ A portion of the site constitutes redevelopment

3. ☐ Proprietary BMPs are included in the Stormwater Management System.

b. ☐ No. Check why the project is exempt:

1. ☐ Single-family house

C. Other Applicable Standards and Requirements (cont'd)

2. ☐ Emergency road repair

3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

3. ☒ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

Cochituate Rail Trail		
a. Plan Title		
BETA Group, Inc.	William McGrath, P.E.	
b. Prepared By	c. Signed and Stamped by	
May 2014	1" = 20'	
d. Final Revision Date	e. Scale	
Notice of Intent for Cochituate Rail Trail		May 2014
f. Additional Plan or Document Title		g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☒ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☒ Attach Stormwater Report, if needed.

E. Fees

1. ☒ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

2. Municipal Check Number	3. Check date
4. State Check Number	5. Check date
6. Payor name on check: First Name	7. Payor name on check: Last Name

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant	2. Date
3. Signature of Property Owner (if different)	4. Date
5. Signature of Representative (if any)	6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

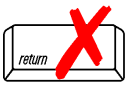
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Applicant Information

1. Location of Project:

Natick Section of Cochituate Rail Trail	Natick
a. Street Address	b. City/Town
c. Check number	d. Fee amount

2. Applicant Mailing Address:

a. First Name	b. Last Name

Town of Natick Community Development Office
c. Organization

13 East Central Street
d. Mailing Address

Natick	MA	01760
e. City/Town	f. State	g. Zip Code

508-647-6450	508-647-6444	
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

a. First Name	b. Last Name

c. Organization

d. Mailing Address

e. City/Town	f. State	g. Zip Code

h. Phone Number	i. Fax Number	j. Email Address

B. Fees

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
NOI Wetland Fee Transmittal Form
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
N/A			N/A

Step 5/Total Project Fee:

Step 6/Fee Payments:

Total Project Fee:	$0 (a. Total Fee from Step 5)
State share of filing Fee:	$0 (b. 1/2 Total Fee **less $**12.50)
City/Town share of filling Fee:	$0 (c. 1/2 Total Fee **plus** $12.50)

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

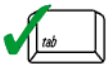
To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☐ New development

☒ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- ☐ No disturbance to any Wetland Resource Areas
- ☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- ☐ Reduced Impervious Area (Redevelopment Only)
- ☒ Minimizing disturbance to existing trees and shrubs
- ☐ LID Site Design Credit Requested:
  - ☐ Credit 1
  - ☐ Credit 2
  - ☐ Credit 3
- ☒ Use of "country drainage" versus curb and gutter conveyance and pipe
- ☒ Bioretention Cells (includes Rain Gardens)
- ☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- ☐ Treebox Filter
- ☒ Water Quality Swale
- ☒ Grass Channel
- ☐ Green Roof
- ☐ Other (describe): _____

Standard 1: No New Untreated Discharges

- ☒ No new untreated discharges
- ☒ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- ☒ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.

☒ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

☒ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

☐ Soil Analysis provided.

☒ Required Recharge Volume calculation provided.

☐ Required Recharge volume reduced through use of the LID site Design Credits.

☒ Sizing the infiltration, BMPs is based on the following method: Check the method used.

☒ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.

☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

☒ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

- ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
- ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
- ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
- ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

☒ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☐ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☒ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☒ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☒ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

☒ The BMP is sized (and calculations provided) based on:

- ☒ The ½" or 1" Water Quality Volume or
- ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☐ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

☒ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☒ Critical areas and BMPs are identified in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- ☐ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☒ Bike Path and/or Foot Path
- ☒ Redevelopment Project
- ☐ Redevelopment portion of mix of new and redevelopment.

☒ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☒ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☐ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☐ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☒ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☒ Name of the stormwater management system owners;
- ☒ Party responsible for operation and maintenance;
- ☒ Schedule for implementation of routine and non-routine maintenance tasks;
- ☒ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☒ Description and delineation of public safety features;
- ☒ Estimated operation and maintenance budget; and
- ☒ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

☒ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☒ An Illicit Discharge Compliance Statement is attached;

☐ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

AFFIDAVIT OF SERVICE

Under the Massachusetts Wetlands Protection Act

I, _____, hereby certify under the pains and penalties of perjury that on _____, I gave notification to abutters in compliance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, and the DEP Guide to Abutter Notification dated April 8, 1994, in connection with the following matter:

> A Notice of Intent application was filed under the Massachusetts Wetlands Protection Act by the Town of Natick Community Development Office with the Town of Natick Conservation Commission on _____, 20___, for the construction of a 2.65 mile shared use path along old railroad right-of-way within the resource areas from Commonwealth Road (Route 30) to Cochituate Street in Natick, Massachusetts.

The form of the notification and a list of the abutters to whom it was given and their addresses are attached to this Affidavit of Service.

_____ _____

Name Date

Notification to Abutters Under the

Massachusetts Wetlands Protection Act

A. The name of the applicant is the Town of Natick Community Development Office.

B. The applicant has filed Notice of Intent (NOI) with the Conservation Commission for the municipality of Natick seeking permission to remove, fill, dredge or alter Resource Areas Subject to Protection under the Wetland Protection Act (General Laws Chapter 131, Section 40).

C. The area of where the proposed construction will be taken place will be within the old railroad right-of-way from Commonwealth Road (Route 30) to Cochituate Street in Natick, Massachusetts.

D. Copies of the NOI may be examined at the commission office:

between the hours of 8:00 AM and 5:00 PM on Monday, Tuesday, and Wednesday
between the hours of 8:00 AM and 8:00 PM on Thursday
between the hours of 8:00 AM and 12:30 PM on Friday

For more information, call: (508) 647-6452

Copies of the NOI may be obtained from the applicant's representative, BETA Group, Inc., by calling (401) 333-2382 between the hours of 9 AM and 4 PM on the following days of the week: Monday through Friday.

Information regarding the date, time, and place of the public hearing may be obtained from the Natick Conservation Commission by calling (508) 647-6452.

Note: Notice of the public hearing, including its date, time, and place, will be published at least five (5) days in advance in the Local Newspaper of Record.

Note: Notice of the public hearing, including its date, time, and place, will be posted in Town Hall not less than forty-eight (48) hours in advance.

ENGINEERING SUCCESS **TOGETHER**

XXX, 2014

RE: Notification of Abutters
Cochituate Rail Trail Project
Natick, Massachusetts

Dear Abutter:

Enclosed please find a Notification of Abutters form to inform you of a public hearing that will be held by the Town of Natick Conservation Commission under the Massachusetts Wetlands Protection Act. The subject of the hearing is a proposed rail trail construction project along old railroad right-of-way from Commonwealth Road (Route 30) to Cochituate Street in Natick, Massachusetts.

Should you have any questions relative to this project, please contact either the Town of Natick Conservation Commission at (508) 647-6452 or me at (401)-333-2382.

Sincerely,

Angela M. Saunders, P.E.
Project Engineer
BETA Group, Inc.

Enclosure:

cc:

N:\4500s\4576 Natick - Cochituate Rail Trail\Permitting\NOI\CRT NOI Notification of Abutters.doc

BETA GROUP, INC.
6 Blackstone Valley Place, Suite 101, Lincoln, RI 02865
P: 401.333.2382 | F: 401.333.9225 | W: www.BETA-Inc.com

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INTRODUCTION

In accordance with the Massachusetts Wetlands Protection Act, M.G.L. Chapter 131, Section 40, BETA Group, Inc. (BETA) has completed the preceding *Notice of Intent Application* for submission to the Town of Natick Conservation Commission and the Department of Environmental Protection (DEP) on behalf of the Town of Natick. The permit application is for proposed shared-use path with overlook areas adjacent to Lake Cochituate. The project area extends along a 2.40 mile stretch of the abandoned Saxonville Branch of the former Boston and Albany Railroad and a 0.25 mile connection known as the Wonder Bread spur. The project limits will stay within the existing railroad right-of-way from Cochituate Road (Route 30) in Framingham, Massachusetts to the Natick Center MBTA Commuter Rail Station in Natick, Massachusetts. Portions of the proposed work will disturb an inland bank and will occur within bordering land subject to flooding, and the 100' buffer zones associated with a number of bordering vegetated wetlands (BVW's) and inland banks along the project corridor.

A USGS map of the project area is shown in Figure 1 – Project Location Map. In addition, photos of the project area are included in the Appendix.

EXISTING CONDITIONS

The project corridor is within the former right-of-way of the Saxonville Branch rail line. The railway is no longer in service and in the summer of 2007 CSX salvaged the tracks and rail road ties. The alignment begins at Cochituate Road (Route 30) at the Framingham and Natick Town Line and progresses south to the Natick Center MBTA Commuter Rail Station located in Natick, MA. Currently, there is an existing railroad bridge that passes over Worcester Road (Route 9). The railway path passes under Loker Street and Cochituate Street. The path also crosses a number of intersections at-grade including Fisher Street, Kansas Street, and Lake Street.

Land use along the Cochituate Rail Trail is a mixture of commercial, residential, and recreational. The railway corridor starts at the east side of Home Depot and travels along the Avalon Apartments before reaching the Wonder Bread Spur connection. South of the Wonder Bread Spur, the corridor is positioned in-between Boston Scientific and Lake Cochituate. The path continues south through Cochituate State Park, along the west side of the American Veterans Post and Camp Arrowhead. In the vicinity of Route 9, the corridor travels along the east side of Toolmex Corporation and a municipal water treatment facility. South of Route 9 to Mechanic Street the corridor is comprised primarily of residential properties, with the exception of the Navy Yard recreational field. The final segment of the railway corridor travels through a mix of residential and commercial properties before terminating in the vicinity of the MBTA commuter rail station.

The Wonder Bread Spur travels in between the Cloverleaf Apartments residential complex and the Cloverleaf Marketplace Shopping Center. The path ends at Speen Street, which is heavily populated by retail establishments including The Natick Collection.

The area within the 66 foot right-of-of way has varying physical attributes. The former road bed is the existing surface and is generally constructed of gravel. Because the proposed alignment will follow an existing railway, the profile of the shared-use path is generally smooth and free from drastic grade changes. Due to the steady design slope of the abandoned rail way through hilly terrain, the path layout typically sits within a cut slope or on top of an embankment. The slopes of the cut and fill embankments are typically between 3:1 and 2:1.

Throughout the project corridor, there are several stormwater crossings. At Station 55+75, an 11'-6" high, 9'-0" wide arch culvert carries the CRT over Lake Cochituate. A 15'-0" wall of wire mesh gabions sit above the culvert to protect the embankment from erosion. The 45'-0" long granite structure is in fair condition due to deteriorated grout along the culvert crown and missing granite blocks in the northwest wingwall.

At Station 97+15, a 3'-6" high, 4'-0" wide box culvert carries the railway over a flagged wetland area. The 33'-0" long masonry block and granite culvert has 6'-0" of fill over the culvert and is noted to be in good condition.

At Station 102+75, a 2'-0" high, 2'-0" wide box culvert carries the railway over a flagged wetland area. The 47'-0" long masonry block and granite culvert has 17'-0" of fill over the culvert and is noted to be in good condition.

At Station 109+75, a 38" diameter reinforced concrete pipe passes under the railway and serves as the outlet for the Route 27 stormwater drainage network. The discharge is located 100'-0" east of the path and is heavily scoured.

At Station 125+75, an 85'-0" culvert runs under the trail with approximately 4'-6" of ground cover. The culvert transitions from a 6" high by 1'-6" wide masonry and granite box culvert into a 20" diameter corrugated plastic pipe. The culvert is noted to be in good condition.

SITE PARAMETERS

Soil Classification

Please refer to Figure No. 2 – Soil Map. According to the *Soil Survey of Middlesex County, Massachusetts,* prepared by the US Department of Agriculture, Soil Conservation Service, underlying soils along the project corridor consist of a number of different soil types, as shown in the table below:

Map Soil Symbol	Soil Name	HSG
1	Water	N/A
253C	Hinckley loamy sand, 8 to 15 percent slopes	A
253D	Hinckley loamy sand, 15 to 25 percent slopes	A
255B	Windsor loamy sand, 3 to 8 percent slopes	A
602	Urban Land	B
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	A
631C	Charlton-Urban land complex, 0 to 8 percent slopes	B
656	Udorthents-Urban land complex	B

Detailed individual descriptions of these soils are not provided herein, but may be found in the referenced USGS soil survey.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

Per the soil survey, the general characteristics of the four (4) hydrologic soil groups are as follows:

Group A – Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B – Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C – Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D – Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a clay pan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

As can be seen in Figure No. 2, the majority of the underlying soils within the project area belong to either HSG A or B; this means that the project area will likely have relatively high to moderate infiltration rates.

Subsurface Investigation
Test pits will be performed during the 75% design stage.

Flood Zone Classification
Please refer to Figure no. 3 – FEMA Soil Maps. According to the Flood Insurance Rate Maps (FIRM) for the Town of Natick, Community Panels 25017C0517E and 25017C0536E, effective date June 4, 2010, Lake Cochituate Middle and South Lakes are located within Zone A, which is defined as land within the 100-year flood plain. A Bordering Land Subject to Flooding (BLSF) is associated with this flood zone.

There are no other Zone A (i.e. 100-year floodplain) areas mapped within the vicinity of the project, and therefore no other BLSF's within the project area.

Wetland Resource Areas
The entire project area was inspected for the presence of wetland resources as defined by: (1) the Massachusetts Wetlands Protection Act (MGL Ch. 131 § 40); and (2) the U.S. Clean Water Act (i.e.

Section 404 and 401 wetlands). The inspected area consisted of the land located generally within 100 feet to either side of the railroad bed from the Natick town line to the MBTA commuter rail station near West Central Street. Refer to the attached wetland report prepared by Wetland Strategies, Inc. dated December 21, 2012, addendum dated January 11, 2013, and the Order of Resource Area Delineation dated June 12, 2013 for more detailed information.

Bordering Vegetated Wetland

According to 310 CMR 10.55 (2), Bordering Vegetated Wetlands (BVW) are freshwater wetlands which border on creeks, rivers, streams, ponds, and lakes. The boundary of Bordering Vegetated Wetlands is the line within which 50% or more of the vegetational community consists of wetland indicator plants and saturated or inundated conditions exist.

There are multiple bordering vegetated wetland (BVW) resource areas within 100 feet of the project limits; these BVW's are generally associated Lake Cochituate, various ponds, drainage channels and intermittent streams which run adjacent to, and in many locations beneath, the railroad bed. The limits of these wetlands have been delineated (Series A through L flags), survey-located, and depicted on the base plans for the project. The 100' BVW buffers associated with the BVW's are also depicted on the base maps.

Bordering Land Subject to Flooding

Bordering Land subject to Flooding (BLSF) includes area inundated by flood waters rising from creeks, rivers, streams, ponds, or lakes. According to 310 CMR 10.57 (2), the boundary is the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm. Where flood studies have been completed, the boundary of BLSF is generally based upon flood profile data prepared by the National Flood Insurance Program. In cases where no flood study has been completed, the boundary is based on the topographic contour associated with the estimated annual high-water elevation.

As stated previously, based upon a review of the FIRM Community Panel 250340 0007 B, there is a 100-year flood zone (Zone A) associated with a Lake Cochituate, which has a corresponding BLSF. The approximate BLSF limits based on the FIRM panel are depicted on the base maps.

Inland Bank

This resource is identified in 310 CMR 10.54 (2) as the portion of land surface which normally abuts and confines a water body. Bank occurs between a water body and a vegetated bordering wetland and adjacent flood plain, or, in the absence of these, it occurs between a water body and an upland area. A bank may be partially or totally vegetated, or it may be comprised of exposed soil, gravel, or stone. The upper boundary of a Bank is the first observable break in the slope of the mean annual flood level, whichever is lower. The lower boundary of a Bank is the mean annual low flow level.

There are several locations of inland bank resource areas within 100 feet of the project limits. The limits of this resource areas have been delineated, survey-located, and depicted on the base plans for the project. The 100' buffers associated with the inland bank are also depicted on the base maps.

Estimated Habitat of Rare Wildlife

Please refer to Figure No. 4 – Priority Habitats of Rare Species. According to maps prepared by the Natural Heritage and Endangered Species Program (NHESP), the project site falls within an area of Priority Habitat of Rare Species and Estimated Habitat of Rare Wildlife. According to correspondence dated November 19, 2009, the NHESP has identified the Eastern Pondmussel as a special concern. In addition, several potential vernal pools are located within the project area. NHESP correspondence can be found in the appendix.

The Massachusetts Wetlands Protection Act requires that no project may be permitted that will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures set forth in 310 CMR 10.59. Therefore, this project will be submitted to NHESP for review.

PROJECT NARRATIVE

GENERAL

The proposed project along the former Saxonville Branch railway corridor is one of two segments in a collaborative effort to create a continuous 3.5 miles long shared-use path from Route 126 in Framingham, MA to Natick Center in Natick, MA. The proposed Natick segment (Route 30 to Natick Center) will be designed to connect into the recently constructed Framingham (Route 30 to Route 126) segment.

The following improvements will be made:

- Provide 12 foot wide asphalt shared-use path, with 2 foot wide non-paved graded shoulders.
    - Main Path (2.40 Miles)
    - Wonder Bread Spur (0.25 Miles)
- Provide overlook areas with benches along the path.
- Provide path striping to delineate travel lanes.
- Provide stormwater management solutions to treat path runoff.

This project will increase the overall impervious area in the vicinity of the resource areas. The project will not significantly alter existing stormwater runoff patterns tributary to the various resource areas in the vicinity of the project. There will be no anticipated BVW disturbances (or associated wetland replacement areas) as a result of the project. The project is located within a Zone II protection area which is a stormwater "critical areas" located within the project area. Work will occur within the 100' BVW buffer zones associated with the various BVW's and Inland Bank along the rail trail, within an Inland Bank, and within Bordering Lands Subject to Flooding associated with Lake Cochituate.

The project is being proposed by the Town of Natick, which has managed the design development of the project. MassDOT will be overseeing the construction of the project. Upon completion of the project, the Town of Natick will also be responsible for the annual inspection and maintenance of the rail trail and associated stormwater features.

STORMWATER MANAGEMENT SYSTEM

The existing railroad bed does not have a stormwater management system. The majority of the existing stormwater entered the resource areas from overland runoff with no water quality treatment.

The proposed stormwater management system will consist mainly of open-channel type of best management practices (BMPs). The three BMP's used on this project are infiltration trenches, grass channels, and bio-retention areas which will provide water quality treatment prior to entering the wetlands. These three BMP's were chosen because of the lower initial construction costs and higher water quality treatment benefits.

WETLAND RESOURCE AREA IMPACTS

The project will affect portions of an Inland Bank and Bordering Lands Subject to Flooding. The purpose of the project is to build a multi-use path within an existing railroad bed. The existing railroad bed is in the vicinity of these various resource areas, and because relocating the multi-use path location to avoid these resource areas is not a viable design alternative, there is no way to avoid impacts to same while still meeting the project goals.

Wetland Impacts and Regulatory Compliance

The impacts associated with resources regulated by the Massachusetts Wetlands Protection Act are described below, as well as the project's compliance with the General Performance Standards set out in Regulations 310 CMR 10.00. As there are no impacts to Bordering Vegetated Wetlands, Riverfront Area, or Land Under Water Bodies and Waterways, those types of resource area are not discussed.

100' BVW Buffer Zone

The entirety of the disturbance to the Buffer Zone to BVW will occur within the existing rail trail corridor. Approximately 133,466 square feet of area within Buffer Zone will be impacted. The Massachusetts Wetlands Protection Act regulations do not contain any performance standards for work in buffer zone. Under the Wetlands Protection Act, activities in the buffer zone may be permitted if they will not negatively impact the adjacent resource areas.

Start Sta.	End Sta.	Flag Series	Area (s.f.)
15+75	22+25	A	14,105
29+75	42+50	B	30,816
48+75	58+00	C, G, H, I	23,429
67+75	76+00	F	17,059
88+75	100+50	J, K, KA	23,993
100+50	104+50	B, E, L, TOB C	7,419
109+00	110+00	A	1,699
125+00	126+75	D	3,373
134+00	138+50	1, 2, 3, TOB E	11,573
		Total (sf):	133,466

Bordering Lands Subject to Flooding

Approximately 3,407 square feet of Bordering Land Subject to Flooding (BLSF) will be impacted as a result of the proposed work, at the following location:

Start Sta.	End Sta.	Flag Series	Area (s.f.)
55+25	56+75	C, G, H	3,407
		Total (sf):	3,407

The BLSF impacts will be subject to the general performance standards applicable to same (section 310 CMR 10.57(4)), which are presented below:

General Performance Standards

1. Compensatory storage shall be provided for all flood storage volume that will be lost as the result of a proposed project within Bordering Land Subject to Flooding, when in the judgment of the issuing authority said loss will cause an increase or will contribute incrementally to an increase in the horizontal extent and level of flood waters during peak flows.

Compensatory storage shall mean a volume not previously used for flood storage and shall be incrementally equal to the theoretical volume of flood water at each elevation, up to and including the 100-year flood elevation, which would be displaced by the proposed project. Such compensatory volume shall have an unrestricted hydraulic connection to the same waterway or water body. Further, with respect to waterways, such compensatory volume shall be provided within the same reach of the river, stream or creek.

The proposed rail trail work will fill a portion of the flood zone associated with Lake Cochituate, so there will be a loss of flood storage volume as a result of the project. The project will disturb 3,407 square feet of bordering land subject to flooding which will result in approximately 170 cubic yard loss of flood storage. The loss of flood storage is from raising the grade of the rail trail by approximately 1.5 feet. Compensatory flood storage is required when "a loss of flood storage will cause an increase or will contribute incrementally to an increase in the horizontal extent and level of flood waters during peak flows."

Lake Cochituate covers approximately 625 acres. The disturbance within the bordering land subject to flooding for Lake Cochituate is less than 0.02% of the size of Lake Cochituate. This disturbance should not cause a substantial increase to the horizontal extent and level of flood waters during peak flows.

Therefore, the project will result in a loss of flood storage; however, it should not cause a substantial increase to the horizontal extent and level of flood waters during peak flows. Therefore, compensatory flood storage is not proposed as part of this project.

2. Work within Bordering Land Subject to Flooding, including that work required to provide the above-specified compensatory storage, shall not restrict flows so as to cause an increase in flood stage or velocity.

None of the proposed rail trail work will restrict flows to or from the BLSF in a manner which increases flood elevations upstream or downstream of the flood zone, nor shall it increase the velocities of flows entering or leaving the flood zone.

3. Work in those portions of bordering land subject to flooding found to be significant to the protection of wildlife habitat shall not impair its capacity to provide important wildlife habitat functions. Except for work which would adversely affect vernal pool habitat, a project or projects on a single lot, for which Notice(s) of Intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 5,000 square feet (whichever is less) of land in this resource area found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the above threshold, or altering vernal pool habitat, may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60.

There are no proposed permanent alterations to land areas contained within the BLSF associated with Lake Cochituate or its tributary perennial stream which will impair the resource area's capacity to provide wildlife habitat functions.

Inland Bank

Approximately 287 square feet of Inland Bank will be impacted as a result of the proposed work, at the following location:

Start Sta.	End Sta.	Flag Series	Length (ft)
135+00	137+75	TOB E	287
		Total (sf):	287

The project as proposed will move the bank from its existing location to accommodate the rail trail. The proposed bank will occur along the proposed rail trail.

The Inland Bank impacts will be subject to the general performance standards applicable to same (section 310 CMR 10.54(4)), which are presented below:

General Performance Standards

(a) Where the presumption set forth in 310 CMR 10.54 (3) is not overcome, any proposed work on a Bank shall not impair the following:

1. the physical stability of the Bank;

2. the water carrying capacity of the existing channel within the Bank;

3. ground water and surface water quality;

4. the capacity of the Bank to provide breeding habitat, escape cover and food for fisheries;

5. the capacity of the Bank to provide important wildlife habitat functions. A project or projects on a single lot, for which Notice of Intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 50 feet (which is less) of the length of the bank found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the above threshold may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60.

The Inland Bank will be moved to accommodate the rail trail. The proposed work will improve the physical stability of the bank by providing a new more structurally sound bank. The proposed work will increase the water carrying capacity of the existing channel by providing a larger more defined channel. The work will not impair the water carrying capacity of the Bank, the ground water and surface water quality, the capacity of the Bank to provide breeding habitat, escape cover, and food for fisheries, or the capacity of the Bank to provide important wildlife habitat functions.

(b) Notwithstanding the provisions of 310 CMR 10.54(4)(a), structures may be permitted in or on a Bank when required to prevent flood damage to facilities, buildings, and roads constructed prior to the effective date of 310 CMR 10.51 through 10.60 or constructed pursuant to a Notice of Intent filed prior to the effective date of 310 CMR 10.51 through 10.60 (April 1, 1983), including the renovation or reconstruction (but not substantial enlargement) of such facilities, buildings, and roads, provided that the following requirements are met:
1. The proposed protective structure, renovation, or reconstruction is designed and constructed using best practical measures so as to minimize adverse effects on the characteristics and functions of the resource area;
2. The applicant demonstrates that there is no reasonable method of protecting, renovating, or rebuilding the facility in question other than the one proposed.

This general performance standard is not applicable to this project.

(c) Notwithstanding the provisions of 310 CMR 10.54(4)(a) or (b), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.59.

The proposed work on the inland bank is over 100 feet from the estimated habitats of rare wildlife and priority habitats of rare species. Therefore, the proposed work on the inland bank should have no adverse effects on rare vertebrate or invertebrate species.

Estimated Habitats of Rare Wildlife (for inland wetlands)
There are four (4) potential vernal pools identified within the vicinity of the project area rail trail. In addition, there is an area of Estimated Habitat 95 and Priority Habitat 200 within the southern portion of the project. Per section 310 CMR 10.59:

> *If a project is within estimated habitat which is indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands Wildlife (if any) published by the Natural Heritage and Endangered Species Program (hereinafter referred to as the Program), a fully completed copy of the Notice of Intent (including all plans, reports, and other materials required under 310 CMR 10.05(4)(a) & (b)) for such project shall be sent to the Program via the U.S. Postal Service by express or priority mail (or otherwise sent in a manner that guarantees delivery within two days). Such copy shall be sent no later than the date of the filing of the Notice of Intent with the issuing authority. Proof of timely mailing or other delivery to the Program of the copy of such Notice of Intent shall be included in the Notice of Intent which is submitted to the issuing authority and sent to the Department's regional office.*

Estimated Habitat Maps shall be based on the estimated geographical extent of the habitats of all state-listed vertebrate and invertebrate animal species for which a reported occurrence within the last 25 years has been accepted by the Program and incorporated into its official data base.

Therefore, a full copy of the completed NOI shall be submitted to the Natural Heritage and Endangered Species Program (NHESP) as part of the permitting process.

MITIGATION METHODS

The following measures will be taken to avoid disturbances to inland waters, wetland features and associated jurisdictional areas. The majority of disturbances will be temporary during construction, and the site will be restored upon completion of the proposed activities.

Soil Erosion and Sedimentation Controls

Soil erosion and sedimentation control issues have been considered in the design and construction planning process of the project. The proposed soil erosion and sedimentation control measures will be installed prior to the initiation of construction activities and maintained throughout construction, and will consist of a silt fence and hay bale barrier along the limits of disturbance for the land-based work. Alternatively, staked compost socks may be used in some locations where they are more effective than silt fence/hay bale barrier. Once established, these measures will be maintained and monitored weekly until construction activities are complete and the site has been adequately stabilized.

The erosion controls will serve as the strict limits of disturbance for the project, and no alterations, including vegetative clearing or surface disturbance, will occur beyond this line. The limits of clearing, grading, and disturbance will be kept to a minimum within the proposed area of construction. All areas outside of these limits, as depicted on the project site plans, will be totally undisturbed, to remain in a completely natural condition. After any significant rainstorm (i.e. greater than 1"), all sedimentation control measures will be inspected and promptly repaired if damaged or replaced if failed.

Post-Construction Operation and Maintenance Plan

All new or existing components of the stormwater management system within the project area are the responsibility of the Town of Natick Department of Public Works (DPW). The following summarizes the actions that will be included in the Natick DPW operation and maintenance plan.

- Street sweeping shall be performed in accordance with the Town of Natick DPW regular maintenance schedule.

- Stormwater structure inspections and cleaning shall be performed in accordance with the Town of Natick DPW regular maintenance schedule.

STORMWATER MANAGEMENT STANDARDS

As stated above, the proposed project qualifies as a limited project under 310 CMR 10.53(3)(f). The project has been designed to meet the Stormwater Management Standards outlined in 310 CMR 10.05(6)(k). The project's conformance with these standards is described below.

CONFORMANCE WITH STANDARDS

Standard 1: No New Untreated Discharges – Met

The proposed project will create thirteen new stormwater discharges from the proposed BMP outlets. Rip-rap lined scour pads are proposed at the outlets. In addition, the project incorporates infiltration swales and a bio-retention area to provide recharge and water quality treatment. Additional computations for water quality can be found in Standards 3-6. Under existing conditions, there is no treatment for the stormwater runoff prior to entering Lake Cochituate. The proposed project will improve the water quality of the runoff discharged to the lake.

Outfall Velocity:

From the HydroCAD analysis of the proposed infiltration swales and bio-retention areas during the ten year storm event, the maximum discharge velocities of the outfalls area as follows:

BMP 1: 1.40 feet per second
BMP 2: 1.39 feet per second
BMP 3: 1.11 feet per second
BMP 4: 1.52 feet per second
BMP 5: 1.37 feet per second
BMP 6: 0.00 feet per second
BMP 7: 0.00 feet per second
BMP 8: 0.67 feet per second
BMP 9: 1.88 feet per second
BMP 10: 1.72 feet per second
BMP 11: 0.93 feet per second
BMP 12: 0.71 feet per second
BMP 13: 0.88 feet per second

The maximum permissible velocity range for a grass-lined outlet is between 3 ft/s and 5 ft/s; the velocities for all of the outfalls are therefore below or within the acceptable range. Rip-rap lined scour pads are proposed at the outlets to further moderate the velocity to ensure that no erosion occurs.

Standard 2: Peak Rate Control & Flood Prevention – Met to the Maximum Extent Practicable

The existing and proposed peak discharges for sixteen design points were analyzed. The design points were based on bordering vegetated wetlands, inland bank, crossing streets, or a portion of Lake Cochituate. Since all of the design points ultimately discharge to Lake Cochituate, the hydrographs from all of the design points were added together within the hydrologic software to determine the overall peak discharge rate for existing and proposed conditions.

The following table summarizes the overall existing and proposed development peak discharge rates for the 2, 10, 25, and 100 year storms.

Peak Discharge (cfs)				
Condition	2-Year	10-Year	25-Year	100-Year
Existing	19.49	51.57	74.25	107.79
Proposed	16.37	53.18	81.71	121.42
Difference	-3.12	1.61	7.46	13.63

The overall post-development peak discharge rate for Lake Cochituate does exceed the pre-development rate for the 10, 25 and 100 year storms; however, the increase in flow rate does not increase the elevation of Lake Cochituate in any storm event. The next section includes the detailed drainage analysis, and the supporting computations can be found in the Appendix.

Standard 3: Recharge to Groundwater – Met

At a minimum, Standard 3 requires that the post-development site provides at least as much recharge volume as the existing conditions. There is an increase in impervious area as a result of the new paved bike path. The total increase in impervious area throughout the project is 172,600 square feet. The required recharge volume is 8,920 cubic feet. The project will meet the recharge requirement through a bio-retention area and several infiltration trenches along the rail trail. The total provided recharge volume is 12,350 cubic feet. The recharge calculations are provided in the appendix.

Test pits will need to be performed to determine the infiltration rate for the proposed BMPs. It is recommended to perform the test pits at 50 foot intervals within the proposed BMPs and at a minimum, two test pits will need to be performed per BMP. The test pits will be performed at the 75% design stage.

Standard 4: 80% TSS Removal – Met to the Maximum Extent Practicable

Since a portion of the proposed improvements discharge to a critical area, those treatment BMPs are subject to the 44% Total Suspended Solids (TSS) removal pretreatment requirement and the one-inch rule for the water quality volume calculations. For the proposed improvements that do not discharge to a critical area, those treatment BMPs are subject to the half-inch rule for the water quality volume calculations.

Due to the width of the right-of-way and other existing and unalterable site constraints along the project corridor, it is not possible to incorporate water quality treatment BMPs which provide the 44% TSS removal pretreatment requirement. It is anticipated that the main users of the trail (bikers, walkers, rollerbladers, etc.) will produce a reduced amount of total suspended solids versus typical users of roadway impervious areas. During the design, several pre-treatment options were investigated including pea gravel diaphragms, filter strips, deep sump catch basins with hoods, and sediment forebays. Pea gravel diaphragms were not selected due to the danger that the stones present to rollerbladers and the likelihood that children will pick up and throw the rocks. Filter strips, catch basins, and sediment forebays were not selected due to vertical and horizontal space constraints.

The project does meet the requirements for the half-inch and one-inch rule for the water quality volume. The selected structural mitigation measures consist of infiltration trenches adjacent to the bike path and a bio-retention area. Due to limited space for structural BMPs, a portion of the project uses grass channels as the selected structural measures. The required water quality volume is 10,790 cubic feet. The provided water quality volume is 12,350 cubic feet. The water quality volume calculations can be found in the Appendix.

The total anticipated TSS removal through the system with the infiltration trenches is 80%, the TSS removal through the system with the bio-retention area is 91%, and the TSS removal on the remainder of the project is 50%. The TSS removal calculation worksheets can be found in the Appendix. It should be noted that the runoff generated by the existing rail bed currently receives no treatment at all; therefore, the proposed mitigation features will still result in a significant improvement to the water quality of the runoff. As this is a redevelopment project, the design therefore meets Standard 4 to the maximum extent practicable.

Another requirement for this standard is the preparation of a Long-Term Pollution Prevention Plan. As an operator of a Municipal Separate Storm Sewer System (MS4), the Town of Natick is required to develop and enact a Long-Term Pollution Prevention Plan; said plan will be applicable to this project.

Standard 5: LUHPPL's – Not applicable

Standard 6: Critical Areas – Met
A portion of the proposed project is within a Zone II of a public water supply which is considered a critical area. The treatment trains include bio-retention areas and infiltration trenches. These BMPs have been approved for stormwater discharges to Zone II critical areas.

Standard 7: Redevelopment Projects – Met
The proposed project consists of improvements to existing portions of railroad right-of-way. As discussed above, Standard No. 2 and 4 have been met to the maximum extent practicable.

Standard 8: Erosion and Sediment Control – Met
Soil and erosion control shall be provided during construction by means of a silt fence and hay bales and/or compost socks as described earlier in the report. The Construction Period Pollution Prevention and Erosion and Sediment Control Plan provides more specific details on these measures, and is attached to the Stormwater Report.

Standard 9: Operation and Maintenance Plan – Met
The long-term post-construction implementation of the Town of Natick DPW Operation and Maintenance (O&M) plan for the stormwater structures within the project area will be the responsibility of the Town of Natick.

Standard 10: Illicit Discharges – Met
There are no known or suspected illicit discharges to the proposed stormwater conveyance system. The Long-Term Pollution Prevention Plan has not been included since the requirements for Phase II for Municipal Separate Storm Sewer Systems include management of illicit discharges.

In summary, this project meets Standards 1, 3, 5, 6, 7, 8, 9, and 10. Since the project qualifies as a redevelopment project, Standards 2 and 4 is met to the maximum extent practicable.

DRAINAGE ANALYSIS

The following is an analysis of existing and proposed conditions as they relate to stormwater runoff generated from the project site. There are several existing drain systems that convey stormwater runoff from I-290 or adjacent properties under Lake Avenue North and discharge to Lake Quinsigamond. These drain systems were not evaluated as part of the drainage analysis because the proposed improvements do not change the watersheds contributing to those drain systems.

Methodology

The comparative pre-development vs. post-development hydrologic analysis was performed using the Soil Conservation Service, Technical Release 20 (TR-20). The 2, 10, 25, and 100-year storm events were modeled for a 24-hour, Type III storm utilizing HydroCAD version 9.0.

The following rainfall amounts have been utilized for each design storm event:
2-Year Frequency Storm: 3.15 inches/24 hrs
10-Year Frequency Storm: 4.60 inches/24 hrs
25-Year Frequency Storm: 5.45 inches/24 hrs
100-Year Frequency Storm: 6.60 inches/24 hrs

HydroCAD calculations are included in the Appendix of this report.

Existing Conditions

For existing conditions, all the stormwater ultimately enters Lake Cochituate. There are sixteen design points which include flagged wetland resource areas, crossing roadways, and Lake Cochituate. The majority of the soils within the project are considered Hydrologic Soil Group A. The primary land cover within the project is grass/wooded area and the existing gravel railroad bed. In addition, there are residential, commercial, and industrial land uses adjacent to the project area. The design points and watershed characteristics (size, curve number, and time of concentration) for existing conditions can be found on the Existing Conditions Watershed Map in the Appendix.

Proposed Improvements

The proposed improvements consist of the construction of a shared use asphalt path along an existing railroad bed. The construction will include several infiltration trenches and a bio-retention area to provide water quality and recharge for the increase in impervious area throughout the project.

For proposed conditions, all the stormwater ultimately enters Lake Cochituate. There are sixteen design points and they correspond with the design points used in the existing conditions analysis. Since all of the stormwater ultimately enters Lake Cochituate, the hydrographs from all the design points are added to determine the peak rate of runoff into Lake Cochituate. The proposed improvements design points and watershed characteristics can be found on the Proposed Conditions Watershed Map in the Appendix.

Results

A hydrologic analysis of the existing conditions and proposed improvements was completed using the TR-20 methodology. The existing and proposed peak discharges for all sixteen design points were analyzed. Since all stormwater ultimately goes to Lake Cochituate, the hydrographs from the design points are added together within the hydrologic software to determine the overall peak discharge rate for existing and proposed conditions.

Supporting calculations are included in the Appendix of this report. The following table represents the results of the peak discharge rates from the site for the 2, 10, 25, and 100-year storms:

Peak Discharge (cfs)				
Condition	2-Year	10-Year	25-Year	100-Year
Existing	19.49	51.57	74.25	107.79
Proposed	16.37	53.18	81.71	121.42
Difference	-3.12	1.61	7.46	13.63

The overall post development peak discharge rate from the project site does exceed the pre-development peak discharge rates for the 10, 25 and 100 year storm events. The increase in discharge rates to Lake Cochituate is due to the increase in impervious area from the proposed multi-use path.

An analysis of the existing and proposed water elevations of Lake Cochituate was performed to demonstrate that the additional stormwater will not increase the water elevation in Lake Cochituate.

Lake Cochituate Water Levels				
Condition	2-Year	10-Year	25-Year	100-Year
Existing	136.00	136.01	136.01	136.02
Proposed	136.00	136.01	136.01	136.02
Difference	0.00	0.00	0.00	0.00

CONCLUSION

The Cochituate Rail Trail Project will construct a shared-use path along an existing railroad bed in Natick, Massachusetts. Portions of the work will take place within and/or in the vicinity of a number of resource areas located along and within the project corridor, including Bordering Land Subject to Flooding, Inland Bank, and a number of associated 100' buffers to Bordering Vegetated Wetlands or Inland Bank. All reasonable and practicable measures will be incorporated in the construction of the project to avoid or minimize the impacts to the environmental resource areas. As a result, the disturbances to the environmental resource areas are not anticipated to have any negative effect on these areas.

The project has been designed to meet the Massachusetts Stormwater Standards to the maximum extent practicable. As shown in the drainage analysis section, the overall post-development peak flow rates to Lake Cochituate are more than the pre-development peak flow rates for the 10, 25, and 100-year storms while they are slightly decreased in the 2-year storm event. Infiltration trenches and bio-retention areas are proposed to provide water quality treatment which is an improvement over existing conditions. The design of the project does, however, propose a number of improvements to the stormwater management system which will provide substantially greater water quality treatment to runoff leaving the rail trail than is currently provided by the existing railroad bed.